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File: USPT

May 3, 2005

DOCUMENT-IDENTIFIER: US 6888153 B2

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TITLE: Capacitive shield for containing radiofrequency magnetic fields

Detailed Description Text (15):

When assembled with a birdcage resonator 26 as shown in FIG. 1, the endcap shield 60 provides a net series parallel combination of the capacitors which support about one quarter of the total capacitive voltage developed at the resonant frequency. The capacitors on the open endring of the resonator 26 also support about one quarter of the capacitive voltage. Likewise, the rungs on each side of the birdcage resonator 26 support about one quarter of the capacitive voltage. Therefore, a purpose of the chosen distribution of capacitive voltage drops is to create an electric field E that is primarily tangential to and uniform intensity around the sample volume of the resonator 26. This is a preferred electric field distribution to reduce dielectric losses in the sample and detuning of the resonator 26 by the sample.

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